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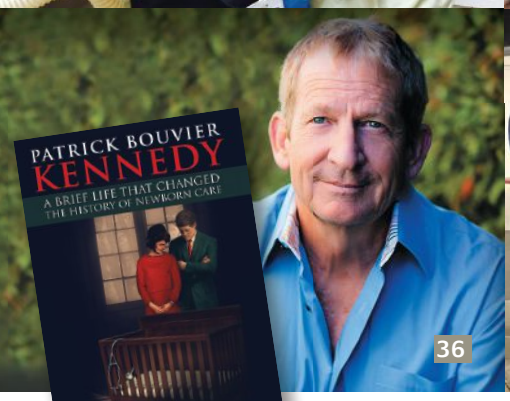

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Ventilation for Life

Evidence Behind HFOV and APRV

by Thomas Lamphere

In part one of this two part article, the theory and basic operation of airway pressure release ventilation (APRV) and high frequency oscillatory ventilation (HFOV) were reviewed. The characteristics of these unconventional methods of ventilation, including improved oxygenation and an open lung strategy, make them attractive alternatives in the treatment of acute respiratory distress syndrome (ARDS). This article will review the latest research into the effectiveness of these types of ventilation.

APRV

To date, most studies on APRV have demonstrated improvement in oxygenation when compared to conventional ventilation. Sydow et al[1] compared patients ventilated with APRV to volume controlled inverse ratio ventilation and found that APRV improved oxygenation. Varpula, et al[2] compared the effects of prone positioning on oxygenation in patients with ARDS while being ventilated in APRV (n = 15) versus SIMV (n = 18). They found that oxygenation was significantly improved in the APRV group both before and after proning. Finally, in a retrospective study of trauma patients (n=46), Dart et al[3] noted a significant improvement in PaO_2 /FiO_2.

Some studies have evaluated effect of APRV usage on the number of ventilator days and/or ICU days. Putensen et al[4] compared a group of trauma patients ventilated in APRV versus controlled continuous mandatory ventilation. The APRV group had both fewer ventilator days and fewer ICU days. However, it should be noted that a smaller percentage of the APRV group had ARDS and the two groups were on different sedation protocols. Gonzalez et al[5] found in a retrospective study of 234 patients that there was no significant difference in ICU or ventilator days between a group of patients ventilated in APRV versus continuous mandatory ventilation. A 2010 study, Maxwell et al[6] compared APRV to low tidal volume ventilation in a group of adult trauma patients. The APRV group had increased ventilator days and ICU days; however, the results may be explained by significantly worse physiologic parameters in the APRV group.

To date, no studies have successfully demonstrated improvement in mortality as a result of using APRV. A recent meta-analysis performed by Bajaj et al[7] evaluated the efficacy of APRV versus conventional ventilation in critically ill patients, using mortality as the primary outcome and duration of mechanical ventilation and the length of stay in the ICU as a secondary outcome. The final analysis included six randomized controlled trials with a total of 249 patients with either ARDS or trauma patients with respiratory failure. The results of the analysis showed no significant difference in mortality overall. In a subgroup analysis of patients with ARDS, there were also no differences in ventilator days and in ICU length of stay. It should be noted that only two of the studies reported outcomes for ventilator days and ICU length of stay. Interestingly, no studies have demonstrated a worsening of mortality when using the APRV mode.

A review of the studies done over the past 30 years provides one clear conclusion—there isn't convincing evidence for or against the use of APRV. While there have been numerous studies aimed at demonstrating the benefits of this mode of ventilation, the studies have mainly been small and/or animal based. The continued lack of convincing evidence has kept this type of unconventional ventilation from becoming a primary ventila-

about the author...

Thomas Lamphere BS, RRT-ACCS, RPFT, FAARC is an instructor in the respiratory care program at Gwynedd Mercy University in Gwynedd Valley, PA. He also serves as the Executive Director for the Pennsylvania Society for Respiratory Care.

tor mode. Large randomized control trials on this type of ventilation are needed to determine its value in treating the critically ill patient.

HFOV

HFOV has traditionally been used for ventilating neonatal and pediatric patients. Like APRV, studies have consistently shown that HFOV does improve oxygenation.[8,9] The small tidal volumes and an open lung strategy make HFOV appear to be an ideal mode of ventilation for patients with ARDS. During the past several years, multiple studies have looked at the benefits of this unconventional type of ventilation for adult patients.

Derdak et al[8] evaluated the safety and efficacy of HFOV for patients with ARDS in a multicenter, randomized, controlled trial of 148 patients ventilated by HFOV (n = 75) and conventional ventilation (n = 73). The results found no significant differences in hemodynamic variables, oxygenation failure, ventilation failure, barotraumas, or mucus plugging between groups. In a smaller study, Bollen et al[10] also evaluated the safety and efficacy of HFOV verus conventional ventilation and found no significant differences between the two groups. In 2010, a systematic review and meta-analysis of HFOV use in patients with ARDS was performed that included eight randomized controlled trials (n = 419) and showed that patients randomized to HFOV had reduced mortality and treatment failure.[11]

However, two recently published large studies suggest this type of ventilation mode may not be as helpful as once thought. A 2013 study by Niall Ferguson et al[12] known as "OSCILLATE" included 548 patients with ARDS ventilated at 39 centers in five countries. The patients were randomized and ventilated with either HFOV or conventional low tidal volume ventilation and the in-hospital mortality was analyzed. The trial was stopped early when 47% of the patients in the HFOV group died while in the hospital compared with 35% of the patients ventilated with low tidal volume conventional ventilation. In addition, the patients in the HFOV group also required more sedatives, paralytic agents, and vasopressors or vasoactive drugs.

Some potential weaknesses in the OSCILLATE study have been raised. First, patients in the HFOV group received more muscle relaxants and sedatives the conventional ventilation group, which could easily lead to unfavorable outcomes. Second, the protocol used had an initial mean airway pressure of 30 cmH2O instead of the traditional method of 5 cmH2O above the mean airway pressure on conventional ventilation.

A second 2013 study by Duncan Young et al[13] (known as "OSCAR") included 795 patients with ARDS ventilated at 12 university hospitals, 4 university-affiliated hospitals, and 13 district general hospitals in the United Kingdom. These patients were also randomized to either HFOV or low tidal volume conventional ventilation. The 30 day mortality of any cause was analyzed and found to be 41% for both study groups. Authors concluded there was no benefit of ventilating with HFOV versus low tidal volume conventional ventilation. Furthermore, the study found that patients in the HFOV group required more sedatives and paralytic agents.

Potential weaknesses in the OSCAR study have been also been raised. First, a large majority of the hospitals in the study had limited experience (n = 6) or no experience (n = 20) with HFOV. Second, patients in the conventional-ventilation group were treated according to local practice in the participating ICUs. The participating units were *encouraged* (rather than required) to use pressure-controlled ventilation at 6 to 8 ml per kilogram of ideal body weight and to use the combinations of PEEP and FiO2 values that were used in the Acute Respiratory Distress Syndrome Network study.[14]

Despite these potential weakness, the OSCILLATE and OSCAR studies are the largest to date and their results discourage the use of HFOV for patients with ARDS. Additionally, an updated meta-analysis completed in 2014 included six random controlled studies and 1,608 patients.[15] The authors concluded that HFOV does not improve survival in adult patients with ARDS.

Conclusion

Although researchers have attempted to show that the use APRV and HFOV can have a significant impact on the mortality rate of patients with ARDS and other diseases, to date there is no compelling evidence that either do so. However, there is good evidence that both types of ventilation improve a patient's oxygenation status. Respiratory therapists should therefore consider them to be two unique tools in their "arsenal" of therapeutic modalities in the fight to bring a patient back to respiratory health.

The continued need for well constructed studies provides an excellent opportunity for respiratory therapists to utilize their unique knowledge and skills to lead the way in performing these studies. ■

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Chronic Disease Manager

New Drugs for Cystic Fibrosis

by Dabney M. Eidson

Cystic fibrosis (CF) is the most common autosomal-recessive, life-threatening genetic disease in Caucasians, seen in one of every 3,200 births within the United States. CF is also found within the Hispanic and African-American populations, with an incidence of one of every 9,500 and one in every 15,000 newborns, respectively. Although less frequently seen, Asians can also suffer from CF at a rate of approximately one in 31,000.[1] CF is complex and affects multiple organs, but pulmonary manifestations continue to be the most common cause of morbidity and death.[1,2] For CF to manifest, there must be two mutations in what is known as the cystic fibrosis transmembrane conductance regulator (CFTR) gene, which is responsible for the regulation and flow of chloride (i.e., salt and hydration) across various cellular membranes within the body.[1,3] Mucus produced in these areas is excessively thick and dehydrated. The airways have depleted airway surface liquid and reduced mucociliary activity. The resulting mucus obstruction creates a prime environment for infection and inflammation, known as the vicious cycle of CF pulmonary disease[2] (see Figure 1). FEV_1% predicted falls an average between 2%–4% yearly[4,5] (see Figure 2). Many factors play a role with this decline, including sex, body mass index, genotype, exacerbation rate, and sputum culture status.[4]

about the author...

Dabney M. Eidson, BS, RRT-NPS, is a pediatric cystic fibrosis respiratory care specialist at Georgia Regents University Children's Hospital of Georgia in Augusta, GA.

Established therapies

The main goal of the Cystic Fibrosis Foundation is to cure the disease and allow all people living with CF the best chance for full and productive lives.[6] Cystic fibrosis carries an extremely high treatment burden with very specific, complex techniques, and is often associated with poor adherence and reduced quality of life.[7-9] The CF patient can be asked to spend up to two-to-four hours daily caring for their lungs.

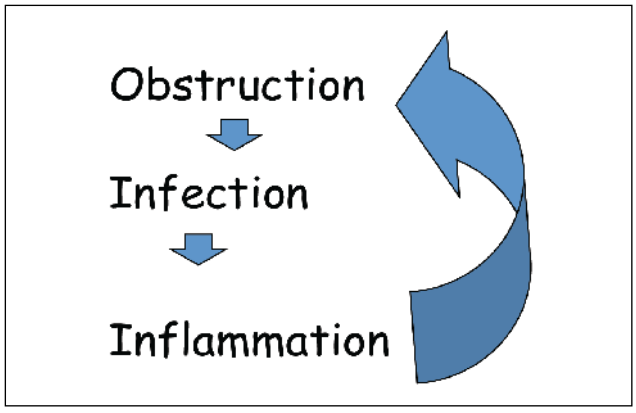
Albuterol can play a role within the CF routine as many CF patients can also have a hyper-reactivity asthmatic component to their airways. Beta-2 agonists can also help with pre-treatment of dyspnea and bronchospasm that can occur with other inhaled medications.[12] One of the first inhaled drugs that comes to mind for CF management is Pulmozyme® (dornase alpha) from Genentech. Approved by the U.S. Food and Drug Administration (FDA) in 1993 for use in CF, dornase alpha alters the mucus structure by using an enzyme to cut the DNA strands within mucus created by neutrophils.[10] The mucus then becomes thinner and, when paired with airway clearance methods, can be easier to expectorate. Hypertonic saline is also an essential component of the CF treatment regimen. Strength can vary between 3%, 5%, and more commonly at 7%. Hypertonic saline has been shown to rehydrate the airway surface liquid, thus improving ciliary function, and can significantly reduce pulmonary exacerbations.[2,11] While controlling inflammation is a goal in CF pulmonary management, inhaled corticosteroids are only indicated once the diagnosis of asthma or allergic bronchopulmonary aspergillosis (ABPA) has been determined.[2,12]

Aerosolized antibiotics

Recognizing that an aggressive approach to managing chronic *Pseudomonas aeruginosa* (PA) colonization within the CF airway leads to improved outcomes. The Cystic Fibrosis Foundation supported and published guidelines that suggest several options for aerosolized antibiotics.[2,12]

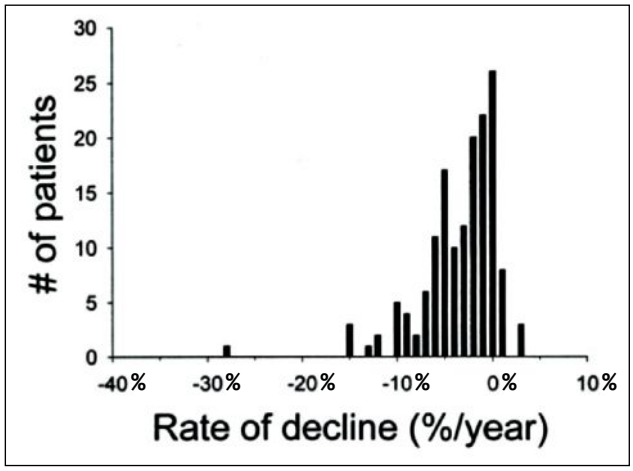
TOBI® (tobramycin 300 mg for inhalation) has been the established cornerstone for preserving lung function, suppressing symptoms, and reducing exacerbations associated with chronic PA colonization in mild, moderate, and severe CF lung disease since 1997.[11,12] Other inhalation formula-

Figure 1. Vicious cycle of CF pulmonary disease



tions of tobramycin are now available. Bethkis® (tobramycin 300 mg inhalation solution) received its FDA approval in 2012 and has a different formulation with osmolarity designed specifically to match the environment of the CF airway. Bethkis is a 4 mL vial compared to TOBI's 5 mL, so administration is slightly faster.[11,13] Both versions are recommended to be nebulized with the PARI LC Plus® nebulizer.[12,13] TOBI Podhaler (tobramycin inhalation powder 28 mg/capsule), approved in 2013, is a dry-powder inhaler designed for significantly less time to administer.[11,14] Also, the burden of nebulizer cleaning and disinfection is removed with the TOBI Podhaler.[14] Cayston® (aztreonam 75 mg for inhalation) is yet another alternative for managing chronic PA colonization and requires reconstitution.[11,15] It is administered three times daily using the Altera nebulizer system for proper delivery and dosage within the airways. The Altera is an electronic vibrating mesh nebulizer; nebulization times are fast, within five minutes.[15] Side effects for all formulations can include sore throat, bronchospasm, dyspnea, increased cough, and hemoptysis.[12-15]

Figure 2. FEV^1% predicted falls an average between 2%–4% each year



Until recently, the only options available to CF patients for medications and airway clearance had the intended goal of removing mucus and the bacteria that resides within it. The ultimate purpose of these treatments is to relieve airway obstruction and subsequent inflammation, with the hope of slowing the decline and preserving FEV1.

A new era with CFTR modulators

CFTR modulators are the first therapies available to address the root cause of cystic fibrosis.[3] This category of medications has recently become available to CF patients and is indicated based on the person's specific genotype.[3,16] There are five categories of CF genetic mutations grouped according to how or where the CFTR protein is defective.[17,18] Kalydeco® (ivacaftor), first available in 2012, helps patients with Class III "gating mutations" such as those with the G551D genotype.[16,17,19] In this case, the CFTR protein is in the correct location within the cellular surface but either remains closed or only opens partially, therefore inhibiting or reducing the transport of chloride.[17] Ivacaftor is a potentiator, which increases the channel's movement of chloride.[12,20] G551D patients on ivacaftor show a significant improvement in both FEV_1% predicted as well as weight gain.[12,20] Liver function values can be adversely affected and require close monitoring.[20]

The most common mutation in CF is F508del. Patients who have two copies of F508del (homozygote), represent approximately 46.5% of the CF population.[18] In this Class II mutation, the CFTR protein does not fold correctly during its formation. Additionally, it isn't able to reach the cellular surface.[17,18] The combination drug ORKAMBI™ (lumacaftor/ivacaftor), known as a corrector, is indicated for those patients with homozygous F508del. Only a modest 4.3%–6.7% improvement in FEV_1% predicted was observed during study trials.[21] However, its major impact was observed in reducing the rate of pulmonary exacerbations by 30%–39% compared to placebo, resulting in less need for intravenous antibiotics and hospitalizations.[21] The potential for longer term improvements in lung function associated with this reduced frequency of exacerbations still remains to be seen. Kalydeko and ORKAMBI are in pill form, so administration time is quick, and are taken twice daily. Adverse reactions specifically for ORKAMBI include dyspnea, pneumonia, hemoptysis, bronchospasm, and gastrointestional symptoms such as nausea, bloating, emesis, and elevated liver function.[22]

Six other CFTR modulator drugs are currently under development and investigation.[11]

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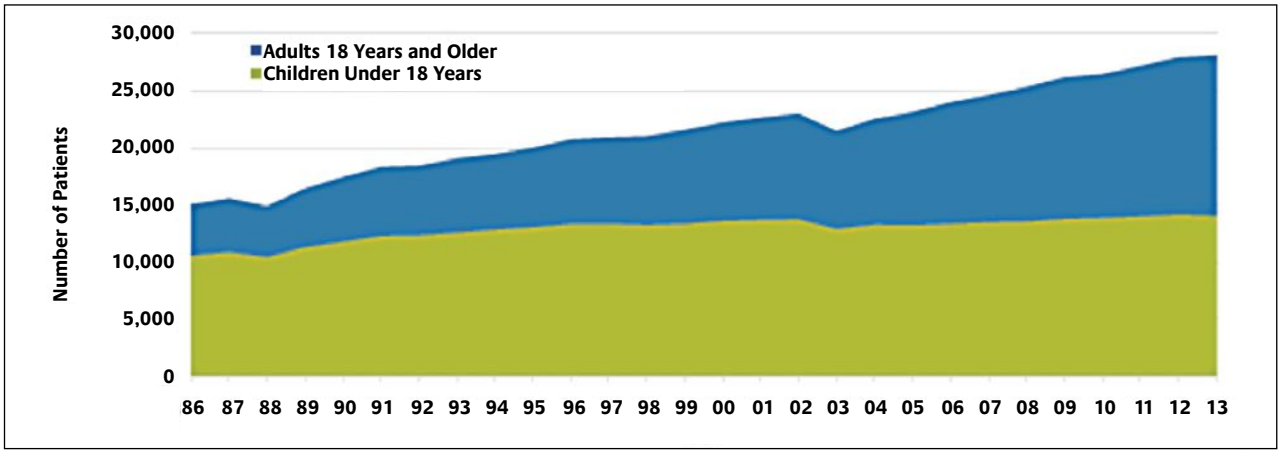
Figure 3. There are now about the same number of adults living with CF as children



are educators who connect with patients to teach how, why, and when they should take their complex assortment of medications. Some inhaled medications can be taken during airway clearance treatment sessions and some cannot. The order of inhaled medications can be important when considering the mechanism of action and time to peak effect of each drug, as well as potential interactions. Specific techniques and nebulizer equipment are needed for effective drug deposition within the airways. Patients, especially those battling a chronic lung disease, not only look to their health care providers to be the authorities in their field but can often become experts themselves as they perform their treatments over time. Patients frequently research alternative and new therapies themselves and begin to question whether they should start or stop certain drugs. Being familiar with the benefits as well as side effects of new therapies, as well as other treatment options to help with adherence, allows the RT to prepare for these types of questions and correlate them to the patient's current condition. Additionally, it is important to be aware that each drug, whether inhaled or taken orally, has specific indications, contraindications, and side effects that can include teratogenic potential. As the treatment burden required to obtain good outcomes with a chronic pulmonary disease like CF increases, it's common to hear the patient ask, "Do I still have to do all of this?" Being able to handle this type of discussion and to know when to refer to other team members, such as the physician, dietician, social worker, and so on can be key for the RT.

Dabney Eidson works with Justice Fitch in a CF clinic. The current average age of survival is 40.7 years, but it may very well be extended beyond that with new developments in CF care.

The average survival age for someone living with CF is now up to 40.7 years; and for the first time in history, approximately the same number of adults are living with CF compared to children[14] (see Figure 3). The annual rate of decline in FEV_1% is gradually slowing due to an improved understanding of the disease and the aggressive treatment options that are available.[4] Respiratory therapists can play an integral role in the management of patients living with complex chronic diseases. Staying abreast of developing medications and treatment options allows the RT to directly impact efforts to preserve lung function and improve quality of life for the patients that we serve. ■

DISCLOSURE

The author is a speaker for Chiesi Pharmaceuticals, specifically with regard to Bethkis inhaled tobramycin 300 mg for management of cystic fibrosis.

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PAP-NAP

by Marilyn Woodard Barclay, BSRC, RRT, RPSGT

It seems as though you can't turn around without bumping into someone with sleep apnea. It isn't surprising that the American Sleep Apnea Association estimates over 18 million Americans have sleep apnea. Some experts believe many more people of all ages remain undiagnosed.

Luckily, excellent diagnostic testing and treatment is available to treat obstructive sleep apnea. Therapies include oral devices, mandibular advancement devices, tongue-retaining devices, upper airway stimulation devices, and surgery; but by far, the most common is positive airway pressure (PAP). PAP therapy encompasses a range of equipment including continuous positive airway pressure (CPAP), bi-level positive airway pressure, and variable positive airway pressure devices.

PAP therapy includes an electronic device that supplies airflow/pressure, a humidifier, tubing, mask, and headgear. When prepared for therapy, a person may feel they are getting ready for an undersea adventure rather than a restful night's sleep. No wonder studies show PAP compliance after a year is only about 50%. In one study, 31% had never started therapy after initial diagnosis and CPAP titration.[1]

Reasons for noncompliance

Patients may complain of equipment-related problems with interface or air that is too hot/cold, or noise. Physical problems such as nasal congestion, difficulty breathing through the nose, headache, ear pressure, and air in the stomach may also plague patients. Some patients unintentionally remove the mask during the night, and conditions such as insomnia, anxiety, post-traumatic stress disorder, and claustrophobia may interfere with adherence.[2]

The Centers for Medicare and Medicaid Services (CMS) defines compliance as "use of CPAP at least 70% of the time over a 30-day period, for at least four hours every night."[3] This threshold must be met within the first three months of treatment. Non-compliance requires that the machine be returned to the vendor. Many commercial insurance carriers also use CMS guidelines to measure CPAP compliance.

This narrow window requires early intervention in order for patients to retain their equipment. What should that intervention look like?

about the author...

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The PAP-NAP

Studies have shown that one-on-one and group interaction, clinic follow-ups, coaching, phone calls, objective data monitoring, and repeat polysomnography (PSG) all improve CPAP use. These services are also time consuming and can be costly. Billing for those services can be problematic.

A possible solution is the Abbreviated Cardio-Respiratory Sleep Study or "PAP-NAP." In 2004, Barry Krakow, MD, and a group of interested practitioners approached regional CMS officials to discuss possible solutions to providing services. The outcome of these discussions was reported in the *Journal of Clinical Sleep Medicine*[4] in 2008 and was christened "the PAP-NAP."

The PAP-NAP is a two-to-four hour, one-on-one daytime session with a sleep provider, sleep technician, or Clinical Sleep Educator (CSE). The idea is to provide a low-stress, highly supportive environment allowing patients time to adapt to CPAP therapy. Often patients complain they are unable to sleep because of all the wires. During a PAP-NAP, electrocardiogram, PAP flow, PAP therapy pressure, mask leak, respiratory effort belts, heart rate, video monitoring, body position, and oxygen saturation are monitored. Electroencephalogram (EEG) hook-up and electromyogram are not included as sleep

staging is not the intent of testing, thereby eliminating the head and face electrodes.

The patient is interviewed regarding their experiences with therapy. Refitting of masks and re-titration of pressures may take place. Patients may be asked to describe, in detail, what is bothering them about the therapy. Guided imagery and relaxation techniques may be used to alleviate anxiety.

Does it work?

In Dr. Krakow's study, PAP-NAPs were done on 99 insomnia patients with psychiatric disorders or symptoms and reluctance to PAP therapy:

- 90% of the patients completing the PAP-NAP also completed overnight titrations compared to 63% of the control group.
- 85% of the PAP-NAP group filled their PAP therapy prescriptions, whereas the control group filled their prescriptions 35% of the time.
- 49%–56% of the study group were adherent to therapy compared to 12%–17% of the control group.

Jerald Simmons, MD, reported the results of a study at the 2012 Associated Professional Sleep Societies 26th Annual Meeting. He stated that 95% of 76 patients were "successfully adapted" to CPAP by the end of the PAP-NAP. At four months, 38% had adequate compliance, 34% had partial compliance, and 28% failed therapy.[5]

Possible training options and opportunities

The American College of Chest Physicians (ACCP) recognized the chronic nature of sleep disease and realized that alternatives for patient education are needed. The ACCP collaborated with the Board of Registered Polysomnographic Technicians (BRPT) and developed a training program that evolved into a certificate, The Clinical Sleep Educator (CSE).

The CSE is defined by the BRPT website as "A Clinical Sleep Educator communicates with patients, families, and the community to educate individuals on sleep disorders, good sleep hygiene, ways to optimize treatment, methods to improve and monitor compliance with prescribed treatment, and in general assists patients in eliminating barriers to care in order to maximize their quality of life."[6]

There is a new credential now available, the Certificate in Clinical Sleep Health offered by the BRPT. It is an advanced-level exam taking the CSE to a higher level allowing sleep clinicians to function as physician extenders. Three pathways are available to qualify to sit for the exam. This credential may open the door to reimbursement allowing credential holders to work closely with patients in order to improve CPAP use and create financial incentive to do so.

Reimbursement

There are no specific Current Procedural Terminology (CPT) codes for PAP-NAP. Dr. Krakow's group successfully used CPT code 97807 with the -52 modifier indicating a shorter testing time. The American Academy of Sleep Medicine website warns, "Sleep centers interested in providing the PAP-NAP service should contact the insurers they work with for confirmation that this is considered a covered service. There are payers that have identified PAP-NAP in their policies as non-covered."[4] Anyone interested in providing PAP-NAPs should check with their local CMS contractor and commercial insurance carriers.

CMS has CPT codes allowing outpatient clinics to charge for graded services. CPT 99211 is a code that allows non-physicians to provide service. A physician must initiate the service, be in the office at the time of service, and be involved in the patient's care. The service must be a face-to-face visit, provided to an established patient, separate from other services provided on the same day. Documentation must include the date of service, the identity of the person providing care, and any interaction with the supervising physician. Billing is under the physician's name and billing number or "incident-to" other health care professionals, such as physician assistants or nurse practitioners.

In 2014, CMS combined the graded system into a single code, G0463. This code also combined the graded payment schedule to a single fixed payment of $92.53. This G code may offer a solution to billing issues.

Where to from here?

It is well established that PAP therapy improves sleep for those with obstructive sleep apnea.[7] In order for PAP to be effective, the patient must wear the device; but many barriers keep patients from using their prescribed therapy.

More studies are needed to explore ways to improve patient PAP therapy compliance. Once a scientific basis for achieving compliance is established, reimbursement for services is more likely to follow. As we understand more about what stands between the patient and compliance, the more we will need trained individuals to provide the support necessary to cross those barriers. ■

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Summary of an NBRC Job Analysis Study for Sleep Disorders Specialists

by Robert C. Shaw Jr.

The National Board for Respiratory Care (NBRC) conducted its second job study involving competencies of sleep disorders specialists in 2014. Study results culminated in a modified design for test forms that will be implemented in March of 2016. Details about the study are summarized in this article.

Methods

The study was directed by an eight-member advisory committee, which was led by Chair Brian W. Carlin, MD, FCCP, FAARC, and Vice Chair Suzanne M. Bollig, RRT-SDS, RPSGT, R. EEGT, FAARC. The committee convened in spring 2014 to design a survey and plan how to solicit respondents. Because respondents would interact with the survey through computers, the committee decided to open with an item to screen out people who were not involved in the sleep specialty. A final item permitted a respondent to forward the survey link to a colleague in an effort to snowball the sampling and increase the number of respondents. In an effort to minimize missing responses, the committee decided to force a response to each item containing a task statement before a respondent could move to the next page.

The number of potential respondents was just over 10,000. Solicitations were sent to populations of current sleep disorders specialist credential holders and medical directors of respiratory care. Members of three specialty sections (sleep, management, and home care) within the membership of the AARC were also solicited. Hospitals that were likely to have respiratory therapy departments were solicited, as were program directors of formal sleep specialty education programs.

about the speaker...

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Solicitations were sent through email and postcards in late June through early July of 2014. Those who had received an email were sent reminders on July 14 and July 24. Access to the survey was closed on July 31.

Results

In regard to survey response quality, about 50 solicitations were returned undelivered and 27 cases were screened out by the opening item. Although 217 people opened the survey, the chair and vice chair decided to exclude respondents who had given a response to less than 45% of the task statements. This left 162 sets of responses.

The solicitation was likely to include many who were not involved in the sleep specialty. Hence, the 2% rate of response was expected. However, the committee observed that the amount of error reduction that would have occurred had there been more respondents would have been minimal; therefore, they decided to proceed with the available sample.

The committee evaluated the intraclass correlations and coefficient alpha values associated with task ratings when organized within five content domains. The lowest intraclass correlation was .96 and the lowest coefficient alpha was .92, which satisfied the committee regarding the likelihood of observing the same ratings from other potential samples from the population and the consistency of ratings within domains.

Most survey respondents (94%) concluded that the list of tasks was adequate in covering the breadth of content that a sleep specialist should be expected to master. The committee concluded that it was unlikely that they had left out any critical task.

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Next, the committee evaluated the demographic characteristics of survey respondents. The evaluation culminated in the committee's conclusion that the respondents' characteristics had matched their understanding of the population of specialists. In case representation issues had gone undetected, the committee planned to make use of responses that were clustered by demographic subgroups while giving the mean of ratings from each subgroup the opportunity to exclude tasks from examination content.

Identifying critical tasks

The committee made seven such subgroup-driven passes through the task list after first making two passes based on information from the whole sample. The first pass involved information about the extent to which each task was performed by sleep specialists represented by the respondents. The second pass involved the mean of ratings indicating task importance as respondents selected one of five options linked to the following question:

Regardless of how often the task is performed, how important is the task to the practice of a sleep disorders specialist in your facility?

One of the options was "not performed," which permitted the committee to observe information about the extent to which a task was a part of practice. The other four options permitted respondents to indicate whether a task was low or high in importance or somewhere in between.

Of the 141 tasks that the committee evaluated, 140 survived the nine passes through the list. The committee proceeded to organize these tasks into a detailed content outline.

Designing the examination

After evaluating information from respondents about how the content domains should be weighted relative to

Table 1. Content and cognitive level test specifications

Sleep Disorders Specialist Examination	Items			
	Cognitive level			
Content Area	Recall	Application	Analysis	Totals
I. PRE-TESTING	**6**	**11**	**4**	**21**
A. Identification and Care of At-Risk Individuals	3	4	1	8
B. Study Preparations	3	7	3	13
II. SLEEP DISORDERS TESTING	**16**	**16**	**18**	**50**
A. Signal Maintenance During Testing	4	4	5	13
B. Sleep-Related Disorders and Therapeutic Interventions	5	10	13	28
C. Documentation During Testing	4	0	0	4
D. Study Conclusion	3	2	0	5
III. STUDY ANALYSIS	**12**	**38**	**0**	**50**
A. Record Review	1	1	0	2
B. Sleep Staging	2	6	0	8
C. Sleep Event Identification	2	8	0	10
D. Sleep Event Reporting	7	23	0	30
IV. ADMINISTRATIVE FUNCTIONS	**7**	**3**	**0**	**10**
A. Data and Equipment Maintenance	3	1	0	4
B. Management	4	2	0	6
V. TREATMENT PLAN	**7**	**13**	**9**	**29**
A. Development	1	4	4	9
B. Implementation	3	5	1	9
C. Evaluation	3	4	4	11
TOTALS	**48**	**81**	**31**	**160**

one another on an examination, the committee solidified the item counts by content domains. The committee proceeded to subdivide the item counts by three cognitive levels—recall, application, and analysis. After observing the prevalence of care for patients of young ages within the survey responses, the committee specified a minimum and maximum number of items within an examination that should involve pediatric patients that were 6 years or younger and pediatric patients between the ages of 7 and 17. The remaining items involve general patients, including adults. Each of these item-specification decisions by the committee culminated in the information that is displayed in Table 1 and 2, which define examination design.

Summary

The committee designed a survey to collect information that they expected to use while making decisions about what future examinations should cover and how those examinations should be designed. Groups representing people involved in the sleep specialty were identified so they could be solicited to respond to the survey.

After evaluating the quality of the survey responses as compared to the intended use of the information within this study, the committee decided to proceed.

Table 2. Test specifications on patient age

Patient Type	Min.	Max.
Pediatric 6 years of age or younger	2	4
Pediatric 7 to 17 years of age	2	4
General	Balance	Balance
Totals	**160**	**160**

First, it decided how it would systematically identify critical tasks that would become stimuli for test items. Then, three sets of item count specifications were created and organized around five content domains, three levels of cognition, and three types of patients.

As previously stated, the first test forms under the new system will be implemented in March of 2016.

How to contact the NBRC

The NBRC Board of Trustees and its committees are interested in your questions, comments, and concerns. You may contact the NBRC by email at nbrc-info@nbrc.org, by phone at (888) 341-4811, or visit the NBRC website at www.nbrc.org. ■

General Counsel

Telemedicine Presents Challenges

by Anthony L. DeWitt, JD, RRT, FAARC

Back when the Kansas City Royals last won a World Series, I frequently made trips on ambulances from Quincy, IL, to St. Louis, MO, if a patient required a ventilator or other life support equipment. Our hospital had no open-heart program. If a patient required intervention, they had to go to Springfield or St. Louis. The St. Louis trip involved the ambulance driving across the Mississippi River into Missouri, down US Highway 61, and into St. Louis, stopping at Barnes or one of the other facilities providing open-heart care. For the majority of the trip, I was providing care in Missouri.

Because neither Illinois nor Missouri had respiratory care boards, there were no issues to consider. Today, in order to make that trip, therapists require licenses in both states in order to comply with state law. It has been this way for some time among EMS providers; although, the Recognition of EMS Personnel Licensure Interstate CompAct (REPLICA) may solve this in the near future. To be absolutely legal, an EMT transporting a patient from Illinois into Missouri must have a license in both states. In practical terms, however, this is often overlooked if it would impair or impede emergency transport.

In much the same way that patient transport is impacted by laws of border states, so is telemedicine. Telemedicine uses internet and video technology to allow practitioners in one state to take care of patients in another. One of the best uses of this technology is in helping COPD patients through outreach and patient education. When a therapist can set up a web conference with six or seven COPD patients at one time, with each patient in a different city and some in a different state, the therapist's teaching time is much more efficient. However, legal issues, such as licensure, can throw a monkey wrench into an otherwise sound approach to problem solving.

The scope of practice for therapists is defined differently in each state. Although many model acts are based on approved language from the AARC and National Board for Respiratory Care, each state legislature makes changes and amendments based on input from physician and hospital groups. Some hospitals want to be able to hire individuals to do minor tasks that do not require therapist-level skill at lower wages, and so the scope of practice is more narrowly defined in those states. Similarly, other states expand the scope of practice because of sparse populations, limited health resources, or large geographic regions requiring health care coverage. As a result, the scope of practice for a therapist in California is different than the scope of practice for a therapist in Missouri or Illinois. In most cases, these are not major issues, but where a therapist crosses a state line electronically, and purports to offer services (even without recompense) in another state, the scope of practice issue can be a serious problem.

The purpose of licensure boards is to protect the public. Unfortunately, in many instances, these boards become about protecting turf instead of protecting patients. Therapists in one state may feel slighted that therapists in another state offer services there and may petition their board to put a stop to interstate practice. The time to find out if there is a problem is before offering services.

This is not to say that there are no ways around this. For example, where a large rural area has no provider servicing pulmonary rehabilitation, and web conferencing could be used effectively to provide the educational

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Kerri did not set out to break the law. Kerri was trying to do a favor and use new technology in the process. Her aim was to help a COPD patient, but in spite of her lofty goals, her actions put her at odds with the state boards in her state and a border state. All she did was have a video conference with a patient in the next state. In so doing, she was practicing respiratory care without a license.

component of this service, a letter to the state board in that rural state might petition for permission to use its state-licensed therapists to provide the care subject to oversight by the boards of both states. Often, a contact from one state board to another is the best way to approach this. This, of course, requires discipline and patience because boards do not move with alacrity in most cases.

As odd as it may seem granting the right to practice outside the state where a person is licensed, it is not that unusual and happens regularly in the legal profession. A motion known by the Latin phrase *pro hac vice* or "for this turn" allows a lawyer to petition a local court for admission solely for the purposes of one case. Using this procedure, lawyers from Texas are currently engaged in a battle in federal court in Kansas City against certain hospice organizations. In admitting the lawyers, the federal court requires them to obey the local rules of court and the local ethical rules, and upon their failure to do so they become subject to discipline by the court, the state bar in the distant state, and the state bar in their home state.

A similar procedure could be worked out in advance with the respiratory care board in a distant state, serving the interests of the patients and the providers. And, of course, the easiest solution is simply to apply for and be granted licensure in the state you're serving. It may take longer to ramp up the service.

Of course, solving the licensure problem does not solve the only legal problem. What happens if a patient is injured as a result of a telemedicine service? Does the provider become liable under the law of that state, or her own state?

In most cases the act of bringing services into another venue makes the service provider subject to a lawsuit in that venue under that forum's laws. This is true even if the venue is geographically distant. For example, a provider in Rochester, MN, might find it very difficult to defend her actions in the town of Great Bend, ND, but if the provider set out to offer services there, they would be deemed in most cases to have consented to jurisdiction.

Some of these issues can be fixed with contracts for services that provide where any lawsuits must be brought, or provide that arbitration is the only way that disputes be settled. But these contracts are often not upheld (because a sick patient is already under a form of duress) and thus a provider must be prepared to defend a lawsuit anywhere they operate, even electronically.

This requires another level of scrutiny. Does the hospital's malpractice insurer limit coverage geographically? Does the therapist's own malpractice carrier[1] limit her coverage to her home state? Is telemedicine excluded? Many newer policies do have exclusions in them and require a careful reading.

After a therapist is charged with misconduct—or after a hospital is cited for violations of its charter—is not the time to engage legal services. The time to engage them is during the exploration phase when looking at adding the service line. No one likes to have a "no" person in the room when discussing new ideas and new concepts for services (and lawyers have a hundred different ways to say "no"). But a lawyer who tells you "no" at the outset, and thereby prevents you from running afoul of the law, and perhaps getting your license disciplined, is much more your friend than the lawyer you hire after you're already in trouble. The former you pay only once. ■

[1] Anyone who provides respiratory care services to patients should have their own policy of insurance. It does not increase your risk of being sued (there is no central list of persons who have malpractice insurance), and more importantly, insurance may provide assistance if you wind up getting in trouble with your state respiratory care board. It usually provides payment for legal services in this situation.

Opening More Doors for the Profession

by Thomas J. Kallstrom, MBA, RRT, FAARC

For some time, the AARC has promoted on many levels, advocated for, and yes, lobbied to position the respiratory therapist beyond the walls of the hospital, where about 75% of respiratory therapists are now employed. However, 21st century medicine and respiratory therapy are moving more rapidly into alternate care sites, beyond the acute care hospitals, and AARC is pushing to make sure respiratory therapists are not left behind as this transition accelerates.

In the last few sessions of Congress, we introduced bills that, if made law, would have allowed separate payment for the respiratory therapist to provide disease management to patients in the physician's office. Although the services would have been paid directly to the physician under Medicare Part B, it would have provided an opportunity to increase recognition of respiratory therapists in this setting.

We had support from all of our partnering, patient advocacy, and sponsoring organizations as we walked the halls of Congress to gain co-sponsors. Unfortunately, these bills were introduced at a time when Congress was polarized and not willing to work together. Given this climate in Congress in 2015, a decision was made to re-focus our legislative efforts on another aspect of Medicare that is garnering Hill support, that is, telehealth. And although at this time we are not pursuing specific respiratory-related bills, we will not give up on this type of legislation and will pursue when the time is right.

The most recent AARC Human Resources Survey found that of those who took the 2014 survey only 2.1% worked in physicians' offices, with the average work week between 26 and 34 hours. If you extrapolate this to the general population of working respiratory therapists, this would be over 3,500 therapists working in physicians' offices. While this is a good thing, we feel it is essential that our members understand that there are many incentives today that can position them into the physician's office.

With the advent of penalties for COPD readmissions, and thus an impetus for hospitals to discover ways to prevent them from happening, forward thinking respiratory therapist leaders should work with their hospital administration to seek out ways to position the profession at the forefront with creative programs that accomplish this goal. We presented two successful programs in the July and November 2015 issues of the *AARC Times,* both led by respiratory therapists. The programs positioned the respiratory therapist as part of their program in the outpatient setting. We also have a website on *AARConnect* that is a great way to share best practices in reducing COPD readmissions.

Another approach that respiratory therapists have used to incorporate themselves into physician practices is through accountable care organizations (ACOs). If a hospital-based respiratory therapist works in a hospital that is an ACO, this could afford another opportunity. By identifying primary care physicians in the ACO, a sales case can be made to the practice of the use of a respiratory therapist in the practice.

The above are examples of approaches that in some instances have already placed the respiratory therapist in the physician practice and in some cases in the home. At the same time, the AARC realizes that it is important that respiratory therapists get some

about the author...

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help in better understanding this ever-changing landscape. Thus, we put together a guide that we feel will be most helpful for respiratory therapists to expand their role into the physician's office. The guide is called the *Toolkit for Respiratory Therapists: Marketing Yourself to the Physician Practice 2016*.

As you will note from the guide, this is particularly exciting because over the past several years Medicare has launched reimbursement programs that allow more expanded services of the respiratory therapist post discharge. The guide not only brings you up-to-date on the new paradigm in health care delivery, it provides you with clear step-by-step details on choosing a physician practice and how to sell your expertise to the physician since you are the allied health experts in pulmonary care. I would encourage you to read this document and let it guide you if choose to take advantage of this opportunity. In saying that, I hope to see the number of respiratory therapists working in physicians' practices continue to grow.

As mentioned earlier, telehealth is another way to position the respiratory therapist outside the walls of the hospital and directly to the patient's home without having to leave the hospital. There is a bill in Congress that is gaining bipartisan support and recognizes the respiratory therapist's expertise. You probably know it by now. It's the Medicare Telehealth Parity Act which was reintroduced in Congress in July 2015 with the bill number H.R. 2948.

H.R. 2948 expands opportunities for Medicare beneficiaries who suffer from pulmonary disease by: 1) covering respiratory services when furnished via an interactive telecommunications system, 2) including an individual's home as a telehealth site, and 3) naming respiratory therapists as qualified telehealth professionals. The latter is most important because it will add respiratory therapists to the Medicare statute, a long-time goal of the AARC. The bill also covers remote patient monitoring for patients with certain chronic conditions that include COPD when furnished as part of chronic care management services.

And finally, in late 2015 AARC President Frank Salvatore submitted comments to the acting administrator of CMS regarding implementation of Medicare's Merit-based Incentive Payment System, including incentive payments for those who participate in eligible alternative payment models (APMs).

Salvatore specifically zeroed in on the need for a waiver that would open the door to greater coverage of telehealth services via the APMs. He suggested that they lift the restrictions on the type of practitioners who can furnish telehealth services, including remote patient monitoring, and supported the expansion of practitioner types to include respiratory therapists.

Salvatore supported his arguments with an overview of the potential ways telehealth and remote patient monitoring could benefit patients with chronic respiratory conditions and why the respiratory therapist is the right practitioner to provide these services.

There are opportunities out there, and I encourage you to download *Toolkit for Respiratory Therapists: Marketing Yourself to the Physician Practice 2016*. In doing so, you may find yet another way to make a difference in your patients' well being. ■

Telehealth and the Respiratory Therapist

by Brooke Yeager, MSc, RRT

Telemedicine has been around in theory and in some limited form or another since the 1920s, when physicians at medical centers in Europe provided radio consultations to patients on ships at sea. In the 1950s, practitioners in the United States began transmitting radiographic images between facilities; and in the 1960s, telemedicine entered a period of rapid expansion when NASA began to remotely track the health status of astronauts in space.

Today, telemedicine only vaguely resembles its origins. Astonishing advances, not only in information technologies and the expansion of telemedicine's supporting infrastructure, but also in the most rudimentary levels of the consumer's knowledge base, have created the fertile foundation that has allowed for the recent, widespread recognition of its enormous value. How then do we define telemedicine — also called telehealth — in the modern era? Traditionally, telehealth was used as an all-encompassing term to describe any health provision, including education and health information services that occurred across a distance. Telemedicine was more specifically defined as the delivery of clinical evaluation and consultation to patients in distant locations using electronic communications and information technologies. However, as these services have expanded beyond health management professionals and providers to policy makers and consumers, the distinction has become marginal at best, and telehealth is now the widely prevailing term.

Telehealth service delivery varies widely, and administration of services largely depends upon the geographic and economic climate of the state in which the service is rendered. The extent to which a state is rural or urban can have a considerable effect on how telehealth services are provided. For example, in states with large urban centers, such as California, multiple different telehealth systems exist and service provision is highly regionalized. Conversely, in states with largely rural populations, as in Mississippi's case, community facilities and emergency departments are faced with a critical shortage of physicians, and the model may be to staff emergency departments with advanced practice medical staff and provide physician oversight from one central academic medical facility.

The degree to which a service may be covered by Medicare is also affected by the relative rurality of a state. Currently, Medicare reimbursement is limited to patients located at a site outside of a metropolitan statistical area (MSA) and meeting certain criteria for rural patients, described in Section 1834 (m) of the Social Security Act. However, as the understanding of the complexities of access to care evolves, so do proposed policies overseeing who may be covered. Nowhere is this more evident than in the Medicare Telehealth Parity Act (MTPA) of 2015, also known as HR 2948. U.S. Congressman Mike Thompson (D-CA) introduced the MTPA with bipartisan support in the 114th Congress on July 7 of last year. An earlier version had first been introduced in the 113th Congress. The legislation has a few provisions that are important to note.

First — and of most significance to respiratory therapists — is the legislative provision that expands the roster of eligible telehealth providers to include respiratory therapists, as well as speech-language pathologists, audiologists, physical and occupational therapists, and certified diabetes educators. Respiratory services would also be added as covered telehealth services, and an individual's home would be added as a telehealth site in conjuction with certain outpatient and home health services, including durable medical equipment.

Second, the coverage of remote patient monitoring (e.g., use of home-based or mobile monitoring devices that transmit vital sign data or information on activities of daily living) for patients with certain chronic conditions will be introduced incrementally. Patients with chronic obstructive pulmonary disease (COPD) and heart failure would be covered upon enactment of the legislation; diabetes coverage would be added two years later. Additional chronic conditions can be added later, as determined by the secretary of Health and Human Services.

Telehealth is not the wave of the future — *it is here now*. It's time for RTs to embrace our role in its delivery and expansion.

While only the Centers for Medicare and Medicaid Services can determine the extent to which new providers and services will be covered within the law, we would expect RTs to be able to provide teleconsultation services including assessment, monitoring, and management of patients diagnosed with COPD via remote patient monitoring. To that end, RTs could access a patient's electronic medical record, review physician diagnoses and disease staging, confer with patients about their prescribed medications, and educate them on proper administration of those medications, including oxygen.

Last, the restriction of reimbursement for services to rural areas would be expanded to include urban and suburban areas, which means additional access to RTs for the patients we serve. This would occur in three phases with initial coverage expanding to any federally qualified health center, any rural health clinic, and any site in a MSA with populations less than 50,000. In the second phase, that coverage area would expand to MSAs with populations up to 100,000 and would include a patient's home as a reimbursable site. The last phase of expansion would occur four years after enactment and would include MSAs with populations over 100,000.

It does not take much imagination to envision the possible telehealth opportunities for respiratory therapists and the patients we serve. Managing asthma and cystic fibrosis, offering pulmonary rehabilitation and tele-spirometry, and expanding education services to both patients and remote site providers is not only feasible but necessary for the advancement of the respiratory care profession. Given the importance of these RT-related provisions in HR 2948 to the profession, it should come as no surprise that advancing the Parity Act through Congress is a major legislative goal of the AARC. In fact, garnering support for the bill will be the key focus of the AARC's 2016 Hill Advocacy Day, when over 100 respiratory therapists will visit Washington, DC, for face-to-face legislative meetings.

Telehealth service management is also an opportunity well suited to the talents of respiratory therapists. As clinicians who commonly deal with disease states ranging from routine outpatient services to the most acute emergency care, RTs are uniquely positioned to understand the needs of all patient populations. At the Medical University of South Carolina (MUSC), we are on the cutting edge of telehealth delivery. MUSC's Center for Telehealth is led by Shawn Valenta, MHA, RRT. As the Center's director of telehealth, he oversees a wide array of services, including tele-psychiatry, tele-stroke, tele-ICU, school-based telehealth, outpatient telehealth services, and emergency and hospital-based telehealth programs. He and the Center's medical director, Dr. James McElligott, have assembled a team of leaders who share a vision and enthusiasm for transforming the delivery of health care within the state of South Carolina and beyond. As a testament to that vision and drive, Governor Nikki Haley and the South Carolina Legislature have authorized the leaders

within the Center for Telehealth to oversee the creation of an open-access statewide telehealth network, which led to the establishment of the South Carolina Telehealth Alliance.

The Alliance is an unprecedented collaboration of academic medical centers, community hospitals and providers, existing telemedicine systems, government leaders, and other entities that believe all South Carolina residents should, and can, have access to quality health care. The model provides these telehealth services while effectively managing the costs of care. The Alliance will be unique in the nation and is expected to bring about a transformation of health care delivery in the state, as well as serve as a model for the country.

As the coordinator for inpatient and emergency teleconsultation services at MUSC, I work closely with the program's medical director, Dr. David McSwain, one of MUSC's pediatric intensivists, to design and implement subspecialty telehealth services, including neurology, EEG, neonatology, infectious disease, adult pulmonary and critical care, trauma, pediatric burn, pediatric gastroenterology, and pediatric critical care and emergency telemedicine services. Hospital-based telehealth services continue to expand rapidly, and we plan to ultimately offer all MUSC subspecialty services through telehealth.

Telehealth is not the wave of the future — *it is here now* — and we, the respiratory care profession, must embrace our role in its delivery and expansion. The AARC, your professional organization, strongly supports the Parity Act. Please take time to write or email your legislators in Washington and ask them to support and co-sponsor the Medicare Telehealth Parity Act. As always, the growth and advancement of our profession is the responsibility of us all. ■

Brooke Yeager, MSc, RRT, is the program coordinator for inpatient and emergency teleconsultation for the Center for Telehealth at the Medical University of South Carolina in Charleston, SC.

One RT's Path to a Career in Telehealth

by Debbie Bunch

Brooke Yeager earned her Bachelor of Science in exercise science from the University of South Carolina, Spartanburg, and her Master of Science in respiratory therapy from Northeastern University in Boston, MA.

She began her career as an EMT in Virginia and worked as an exercise physiologist in orthopedic physical therapy programs at the University of Tennessee Medical Center, and Select Physical Therapy in Mount Pleasant, SC. She has worked at the Medical University of South Carolina (MUSC) since 2008, as a critical care therapist in the cardiothoracic ICU, and as the pulmonary rehabilitation director specializing in the management of left ventricular assist devices and lung and heart transplant patients.

She has worked at the Center for Telehealth since March of 2014, starting as the program coordinator for the pediatric emergency and critical care telemedicine program. Due to the success of the pediatric program, her responsibilities have expanded to include the development and implementation of a broader range of both adult and pediatric inpatient and emergency teleconsultation services at MUSC and across South Carolina. Additionally, she has built upon her advocacy experience with AARC to become the primary political liaison for the MUSC Center for Telehealth. ■

Building the Bonds that Bind

Connecting with patients is crucial in this era of health care reform

by Debbie Bunch

The Affordable Care Act has turned health care upside down in many ways, but nowhere is this truer than in the patient-provider relationship. What used to be a clinician-driven pathway is now a two-way street, and with hospitals today subject to reimbursement reductions if they can't show acceptable scores on the HCAHPS patient satisfaction survey, many would say it's the patient who is really in the driver's seat.

Although respiratory therapists aren't noted by name on the survey, many of the questions pertain to the care the patient received in general. However, that really doesn't matter anyway because patients don't distinguish between various health care providers very well. All they know is that the person who came into their room to deliver their treatment was great and met all their needs — or left something to be desired — and when they fill out the survey, they're going to check the boxes accordingly.

Clearly, it has never been more important for respiratory therapists to establish firm bonds with their patients. The good news is that most therapists are already doing this, not only to elicit better scores on the HCAHPS, but more importantly, to deliver better care to people in need.

Poor scores on the HCAHPS patient satisfaction survey can lead to reimbursement reductions. Stronger therapist-patient relationships can help ensure that doesn't happen in your facility.

Simple acts of kindness

Barry Westling, MSc, RRT-NPS, RPFT, FAARC, believes simple acts of kindness start by recognizing that hospitalization puts most people in a vulnerable position. "I understand many patients lose their sense of personal identity, and almost all lose a great deal of privacy when hospitalization is required," says the AARC member from Merlin, OR. He has always tried to reinstate some of that loss by zeroing in on items he may see displayed in the room and using them to start a conversation with the patient and/or family members.

"For instance, if I see get well cards or flowers or balloons or drawings, I may say something like 'oh, that's very nice,'" Westling says. "If the patient chooses to respond I may ask about who sent it or how they know that person." Getting the patient to talk about people and things in his own life helps Westling build a connection that can lead to a higher level of patient cooperation when it comes time to deliver therapy or education. "I try to remember the hospital may be my workplace, but it's the patient's residence for medical care, and these simple acts of kindness and courtesy really take no extra time or effort."

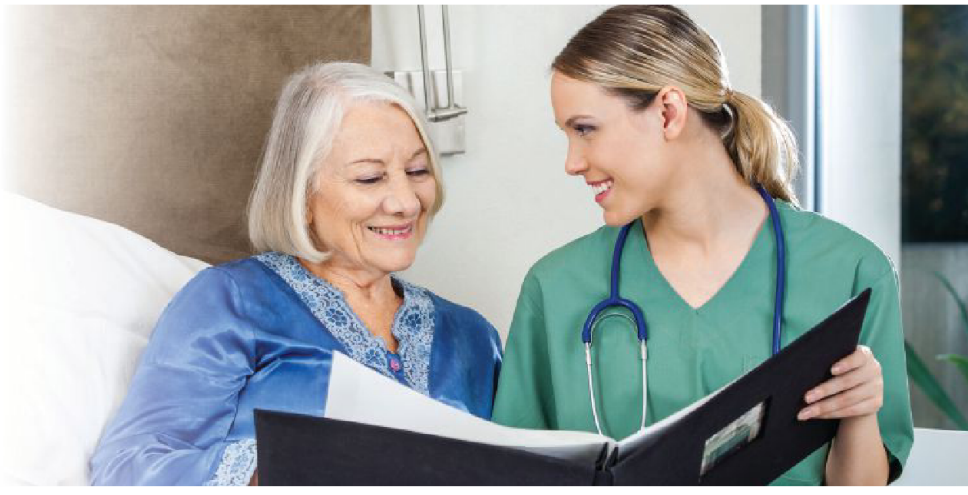
After 39 years in the profession, Jack Kunst, RRT, RPFT, says an important thing he's learned is, "you become more engaged with patients by asking them questions about them as a person and their life's experiences." Understanding where they're coming from, and showing them you value them as a person and not just a patient, makes the care process much easier.

"Once they know you see them as a valued person and you learn about their outlook on life, you have a better knowledge of their motivation for self-care and what level of care and education will work best for them," says the member from Grand Rapids, MI. "With this approach there is a personal working relationship and a more rewarding career."

Feel good moments

"The key to performance during PFT testing is the technician expressing a personal interest in the test subject," agrees Dale E. Claes, BS, RRT, RPFT, a therapist from Fresno, CA. "Talk to them and support them regardless of their status in life."

He has found that to be essential in his community hospital, where the patients range from very rich to homeless. He recalls one man in particular who he thinks illustrates how valuable a kind word and the expression of genuine interest can be. "One example is a gentleman who recycled pallets for a living," says Claes. "He was quiet and bowed-headed when he told of his work." Instead of uttering a noncommittal "that's nice" or something similar, the AARC member congratulated him on having a job and being able to provide for his family. It was a feel good moment for patient and therapist alike.



Cathy Case, BSEd, RRT, CPFT, a member from Edgewater, CO, also emphasizes the importance of making a good impression on the patient from the first moment of contact. "First impressions really do count," she says. To make sure everyone gets off on the right foot in her pulmonary diagnostics lab, her RTs walk up to their next patient in the waiting room and greet them with a big smile and a handshake rather than just call out their name at the door.

Because it is a bit of a hike back to the testing area, they also offer to help carry the patient's belongings or get a wheelchair for anyone who might need one, and they let the patient set the pace for the walk. The RTs then strike up a casual conversation along the way. "By the time we reach the lab, our patient knows they are cared for and respected, which I believe is essential for obtaining excellent test data," says Case.

Don't just talk, listen

For Vickie Klein, CRT, CPFT, a member from Lee's Summit, MO, who works in pulmonary rehabilitation and does in-patient consultations, bonding with the patient is paramount to achieving any goals in the care plan. Since many of her patients are elderly, she works hard to take their physical limitations into account when educating them about their condition, and she has a wide array of educational tools and visual aids on hand to meet the needs of each individual. "It's best to use short, simple words and stick to one topic at a time," she advises.

Equally important is to listen to what the patient has to say. "Don't interrupt your patients even if you know what they are going to ask," says Klein. "This causes a shut down immediately." She always leaves her phone number with the patient when she leaves the room, and she tries to make a second visit within 24 hours to follow up and answer any additional questions the patient may have thought of in the interim. Karen Lane, RRT, AE-C, and her colleagues on the in-patient pulmonary rehabilitation team are now doing COPD disease management education for all patients at their hospital coded to COPD. She says they take special care to ensure a welcoming environment. "By sitting down next to the patient to provide education and plan for post-discharge services, we are establishing a sense of care and commitment to the patient's success at home," says the AARC member from Chesterfield, MO.

The therapists keep the patient's need for autonomy in mind at all times, asking permission to make follow-up calls to check on their progress and answer any questions they may have. "Our patient satisfaction scores are near 100 percent," she says.

Come Together: Collaborative Care Must Involve the Patient, Too

by Debbie Bunch

Proposed regulations call for a patient-driven discharge process

Health care reform is quickly changing the nation's health care system from one driven by providers alone to one seeking greater involvement from the patient. According to Kent Christopher, MD, RRT, FAARC, from the University of Colorado Health Sciences Center in Denver, CO, proposed regulatory changes released last November are likely to ramp up these efforts by requiring providers to place a greater emphasis on the patient's goals and treatment preferences in the discharge process.

"Now we have to think, what does the patient want," said Dr. Christopher last fall in a talk at AARC Congress 2015 in Tampa, FL.

Earlier start

The proposed changes specifically call for providers to begin the discharge process within 24 hours of admission. Everything from the patient's perspectives on the location of discharge to his or his caregiver's ability to perform self-care will be taken into account. Utilization of the multidisciplinary team (including respiratory therapists) is emphasized, as is the need for patient education and written instructions on post-discharge care. Under these rules, hospitals and post-acute care providers would be required to share data and would be judged on quality and resource measures as well.

Dr. Christopher went on to share findings from studies that have been conducted on the components of collaborative, patient-centric care, including one that looked at the role of a care transition coach in meeting the needs of chronic respiratory patients. That study showed a drop in re-hospitalizations among patients in the intervention group, and patients themselves reported increased confidence in and understanding of their self-management abilities and plan. A meta-analysis of studies on integrative disease management for patients with COPD found equally positive results.

Let's talk

Dr. Christopher believes it all hinges on the interactive discussion, and he sees a significant role for the respiratory therapist in that process. "In the typical patient encounter, the clinician asks direct, specific questions, the patient attempts to briefly answer, the clinician makes an assessment, plan, or recommendations, and care is delivered," he said. "Interactive discussion is minimal to none."

Asking more open-ended questions designed to get the patient to talk about his condition and treatment and to establish a real connection with his health care provider is the answer. As a former respiratory therapist himself, Dr. Christopher believes we can use our expertise to take advantage of our educational moments as RTs and lift our patients' spirits.

"When you go in to see a hospitalized patient, do you stand over the bed?" he asked. Better to sit down, look the patient in the eye, smile, and then ask the kind of questions that will encourage the patient to tell you what his needs are. When the patient raises questions you can't answer, you should simply defer to the physician — and then give the physician a call letting him/her know those questions need to be addressed to ensure a smooth transition.

Which one are you?

Getting from here to there for everyone involved in the patient's care will require providers to build a team approach to care with an effective game plan based on the medical evidence, concluded Dr. Christopher. Silos need to be eliminated and everyone needs to work together for the good of the patient. "If the team isn't talking to each other, you're not going to be very effective for the patient," he emphasized.

The physician stressed that compassion should be the overriding principle. Then he advised, "At the end of the day, before you go home, ask yourself this question: Are you simply a health care provider, or are you a caring health care provider?" ■

Seven questions

In response to the possible reimbursement reductions posed by the HCAHPS patient satisfaction survey, many hospitals across the country have implemented training programs aimed at helping their clinicians be more aware of patient needs. The therapists we talked to for this story certainly don't need a lot of training — compassionate care comes naturally to them.

But that isn't always the case. Garry Kauffman, MPA, RRT, FAARC, a management consultant from Walnut Cove, NC, with years of experience as an RT manager, believes there is much managers can do to ensure their staff members are crossing all the t's and dotting all the i's in this area.

"Years ago I developed a short list of questions that I asked patients and family members when I did my patient/family satisfaction rounds for those patients receiving care from an RT," says the AARC member who was recently named the Management Section Practitioner of the Year. Here's what Kauffman wanted to know:

1. Did the respiratory therapist knock on your door and ask your permission to enter? (If applicable)
2. Did the respiratory therapist introduce him/herself?
3. Did the respiratory therapist explain the service he/she was going to provide?
4. Did the respiratory therapist ask for your understanding of the reasons for the therapy?
5. Which of our respiratory therapists went above and beyond?
6. Did the respiratory therapist, after concluding the therapy, wash her/his hands?
7. Did the respiratory therapist ask, "Is there anything I can do for you? I have the time."

Asking these questions helped him determine which of his staff were effectively connecting with their patients and which might need remediation. He included the results in his monthly quality assurance/patient-family satisfaction reports and he made sure staff members who were cited by patients as going above and beyond got special recognition.

"For those respiratory therapists who were mentioned by the patient or family, I placed their name in a hat and held a monthly drawing as one means of recognizing the great staff," says Kauffman. While the prizes were nominal (a chocolate bar or other special treat), the winning name always appeared in the monthly employee newsletter as well.

Where respiratory therapists shine

The patient has always been the primary concern of health care professionals. But the truth is, in the past, patients were expected to sit quietly and do what they were told. Current initiatives like the HCAHPS, coupled with new initiatives such as the recently proposed changes to the discharge planning requirements, are giving patients significantly more control over their own care. That's not a bad thing, because as any RT knows, a patient who is not invested in the care of his chronic respiratory condition is not likely to have good outcomes. It does mean clinicians need to take a step back from their roles as the people in charge and realize the patient has to be an equal partner in the care process.

It begins with caring, compassionate clinicians, and that's where respiratory therapists have always shined. Today, the bonds they create with their patients mean as much to their hospitals as they do to them. ■

Navigating the IRS Seas to Your Advantage

By Tony Lovio

Trying to understand the IRS code can be like trying to sail through the Bermuda Triangle or translating hieroglyphics. You may review a map or rule 10 times and still don't know what it says. You may hear of certain tax break areas, but can they really benefit you? Is it worth the grief to sort it out? These are all good questions. Even experts struggle through this. So this year, I have selected some particular topics from the past to update, re-examine, and re-emphasize, as I believe you may have some benefits from being informed on the following:

- Educational Deductions or Credits
- The Affordable Care Act (Obamacare)
- IRS Scams
- Bullets of Good Information

While I can't guarantee anything, perhaps the following ideas may make your job a little easier. Remember also that the tips and information listed here are for general information purposes only. Your factual circumstances are unique to you. If you think these points can possibly help, you should consult with a local tax professional. All publications referred to herein are available on the IRS website at www.irs.gov or by calling 800-TAX-FORM (800-829-3676). If you call the IRS, be patient. It can take a long time to talk to someone there.

Education deductions/credits

You'll notice I'm hitting the education topic again because so many of you are potentially involved with this in so many different ways. There are good tax avenues available to improve your skills and save some money—from taking an asthma course to a full-degree educational program.

The cost of education continues to rise, and it's often a struggle to find the money to take courses. Maybe Uncle Sam can help you. I have mentioned these in previous tax articles, but I can't stress enough the opportunity you might have here. The rules and limitations can be complex, so I'll hit the highlights and if something may benefit you, contact your tax professional.

Tax credits and deductions can benefit you with your expenses for higher education.

A tax credit reduces the amount of income tax you may have to pay.

A tax deduction reduces the amount of your income that is subject to tax, thus generally reducing the amount of tax you may have to pay.

Credits

There are two education credits available: the American Opportunity Tax Credit (AOTC) and the Lifetime Learning Credit (LLC).

American Opportunity Tax Credit — The AOTC can be up to $2,500 annually for an eligible student enrolled at least half time. This credit applies for the first four years of higher education. Forty percent of the AOTC is refundable. That means that you may be able to get up to $1,000 of the credit as a refund, even if you don't owe any taxes. ***NOTE:*** *You may want to hurry to claim this credit because it will expire after 2017 unless congress extends it.*

Lifetime Learning Credit — With the LLC, you may be able to claim a tax credit of up to $2,000 on your federal tax return. There is no limit on the number of years you can claim this credit for an eligible student.

To claim the LLC credit:

- You, your dependent, or a third party pays for qualified educational expenses.
- An eligible student must be enrolled in an eligible educational institution.
- The eligible student is yourself, spouse, or dependent on your tax return.
- There's one credit per student. You can claim only one type of education credit per student on your federal tax return each year.
- You may include qualified expenses to figure your credit. This may include amounts you pay for tuition, fees, and other related expenses for an eligible student. Refer to IRS.gov for more about the additional rules that apply to each credit.
- These credits have some income phase-out rules, so check them out if this interests you.
- Form 1098-T: In most cases, you should receive Form 1098-T (Tuition Statement) from your school. This form reports your qualified expenses to the IRS and to you. You may notice that the amount shown on the form is different than the amount you actually paid. That's because some of your related costs may not appear on Form 1098-T. For example, the cost of your textbooks may not appear on the form, but you still may be able to claim your textbook costs as part of the credit. Remember, you can only claim an education credit for the qualified expenses that you paid in that same tax year.

About the Author

AARC Controller Tony Lovio is CPA certified in Michigan and Oklahoma. He has more than 40 years of experience in public, private, and non-profit accounting as a chief financial officer, controller, or finance director and has written tax-tip articles for *AARC Times* for several years.

Deductions

You may be able to deduct qualified education expenses (e.g., tuitions and fees) paid during the year for yourself, your spouse, or your dependent. You cannot claim this deduction if your filing status is "married filing separately" or if someone else can claim an exemption for you as a dependent on their tax return. The qualified expenses must be for higher education.

The tuition and fees deduction can reduce the amount of your income subject to tax by up to $4,000. This deduction, reported on Form 8917 (Tuition and Fees Deduction) is taken as an adjustment to income. This means you can claim this deduction even if you do not itemize deductions on Form 1040 (Schedule A). This deduction may be beneficial to you if, for example, you cannot take the lifetime learning credit because your income is too high.

You may be able to take one of the education credits for your education expenses instead of a tuition and fees deduction. You can choose the one that will give you the lower tax. You can't take both a credit and deduction.

Generally, you can claim the tuition and fees deduction if all three of the following requirements are met:

- You pay qualified education expenses of higher education.
- You pay the education expenses for an eligible student.
- The eligible student is yourself, your spouse, or your dependent for whom you claim an exemption on your tax return.

There are other rules and limits that may reduce or eliminate these credits or deductions as well.

Calculate your potential benefit under all options and take the one that is best for you. The AOTC is potentially more valuable, as it is partially refundable.

Business deduction for work-related education

If you are an employee and can itemize your deductions, you may be able to claim a deduction for the expenses you pay for your work-related education. Your deduction will be the amount by which your qualifying work-related education expenses plus other job and certain miscellaneous expenses are greater than 2% of your adjusted gross income. An itemized deduction may reduce the amount of your income subject to tax.

If you are self-employed, you deduct your expenses for qualifying work-related education directly from your self-employment income. This may reduce the amount of your income subject to both income tax and self-employment tax.

NOTE: Your work-related education expenses may also qualify you for other, potentially better, tax benefits, such as the tuition and fees deduction and the lifetime learning credit mentioned above. You may qualify for these other benefits even if you do not meet the requirements listed above. So, again, check out all options.

To claim a business deduction for work-related education, you must:

- Be working
- Itemize your deductions on Schedule A (Form 1040 or 1040NR) if you are an employee
- File Schedule C (Form 1040), Schedule C-EZ (Form 1040), or Schedule F (Form 1040) if you are self-employed
- Have expenses for education that meet the requirements discussed under Qualifying Work-Related Education (see below).

Qualifying work-related education

You can deduct the costs of qualifying work-related education as business expenses. This is education that meets at least one of the following two tests:

- The education is required by your employer or the law to keep your present salary, status, or job. The required education must serve a bona fide business purpose of your employer.
- The education maintains or improves skills needed in your present work.

However, even if the education meets one or both of the above tests, it is *not* qualifying work-related education if it:

- Is needed to meet the minimum educational requirements of your present trade or business, or
- Is part of a program of study that will qualify you for a new trade or business.

You can deduct the costs of qualifying work-related education as a business expense even if the education could lead to a degree.

Education to maintain or improve skills

If your education is not required by your employer or the law, it can be qualifying work-related education only if it maintains or improves skills needed in your present work. This could include refresher courses, courses on current developments, and academic or vocational courses.

NOTE: Beyond what's mentioned above, you may be able to deduct work-related educational expenses paid during the year as an itemized deduction on Form 1040 (Schedule A). This can include the many seminars and online courses that the AARC offers to you, as well as education at the AARC Congress and Summer Forum. There are deduction rules, so refer to IRS Publication 970.

Whew!! The education area can be complicated. Let's do something easier now (not really).

Affordable Care Act tax provisions for individuals and families

The Affordable Care Act, or health care law, contains health insurance coverage, as well as financial assistance options for individuals and families. The IRS administers the tax provisions included in the law. Visit HealthCare.gov for more information on coverage options and financial assistance. Here's what you should know about the health care law.

The Individual Shared Responsibility Provision requires you and each member of your family to have qualifying health insurance (called minimum essential coverage), have an exemption, or make a shared responsibility payment when you file your federal income tax return. If you get your insurance coverage through the Health Insurance Marketplace, you may be eligible for a premium tax credit.

Coverage

If you are like most people, you probably already have qualifying health care coverage and don't need to do anything more than continue your insurance. If you don't have coverage, you may be able to get it through the Health Insurance Marketplace.

Further, if you don't have or maintain coverage, you will have to get an exemption or make a payment with your federal income tax return. Exemptions include:

Coverage is considered unaffordable — The minimum amount you would have paid for employer-sponsored coverage or a bronze-level health plan (depending on your circumstances) is more than 8% of your actual household income for the year as computed on your tax return.

Short coverage gap — You went without coverage for less than three consecutive months during the year.

Income below the tax return filing threshold — Your gross income or your household income is less than your applicable minimum threshold for filing a tax return.

Credits

If you get coverage through the Health Insurance Marketplace you may be eligible for the premium tax credit (PTC). The premium tax credit can be paid in advance to your insurance company or to you when you file your federal income tax return. **NOTE:** The rules are involved in terms of determining who qualifies, the amount of the credit, and the option to get it early. For more information, see IRS Publication 974.

Payments

If you don't have coverage or qualify for an exemption, you most likely will have to make an Individual Shared Responsibility payment when you file your income tax return.

For 2015, generally, the payment amount is the greater of 2% of your household income above your filing threshold, limited to $325 per adult ($162.50 per child) and limited to a family maximum of $975.

You will report your coverage, exemption, or payment on your federal income tax return. These payments increase in future years (e.g., 2016: $2,085 maximum).

Tax scams and identify theft

Hardly a week goes by—and I'm not exaggerating—that either my wife or I receive a phone call from the "IRS." The "IRS" says we owe several thousand dollars in back taxes and that we had ignored all of their attempts to contact us. Further, we have to come up with this money **now** or I am going to have my passport revoked, be arrested in two days, and put in jail for nine years. When we strongly push back, they hang up. Unfortunately, not everyone pushes back and some are significantly victimized.

This is but one example of the frauds and identity theft being perpetrated today. Identity theft remains a top priority for the IRS in 2015. It is one of the fastest growing crimes nationwide, and refund fraud caused by identity theft is one of the biggest challenges facing the IRS and you as a potential victim.

Tips to protect you from becoming a victim of identity theft

FIRST AND MOST IMPORTANT — Don't give personal information over the phone, through the mail, or on the Internet unless you have initiated the contact or you are sure you know who you are dealing with. ***Remember, the IRS will never call you and demand money!***

FILE YOUR TAX RETURN EARLY — While it may be difficult, it's better to file in February than to find out in mid-April that someone has stolen your identity, filed a return in your name in March and falsely obtained a large refund under your name. Beat them to the punch. If this fraud occurs, this can be a messy issue to straighten out.

Don't carry your social security card or any documents that include your social security number (SSN).

If any company you do business with shows your full SSN on their statements or documents to you, have them change that immediately. Most companies might only show the last four digits.

Don't give a business your SSN just because they ask. Give it only when required.

Protect your financial information. Shred any old documents with any personal information on them.

Check your credit report at least every 12 months.

Secure personal information in your home.

Protect your personal computers by using firewalls and anti-spam/virus software, updating security patches, and changing passwords for Internet accounts. It's a hassle but consider changing passwords at least every six months, if not sooner.

If you think you've been a victim of identity theft involving the IRS, check the IRS website for information on who to contact to report your issue. Contact the credit agencies (named below) and arrange for some protection, possibly credit holds, on your account.

Do you know what's in your credit report?

Request a free copy annually from each of the three credit agencies (Equifax, Experian, and Transunion) via www.annualcreditreport.com. Consider requesting a report from one company every four months to catch anything new that might recently have occurred.

Hopefully, I have given you more to think about and not confused you more. There is no smooth sailing or Rosetta Stone here. It's not easy, but you can do it. And I'm no expert on all aspects of tax law by any means but if you do have a question, feel free to contact me at: lovio@aarc.org. ■

Other good information

Last, in rapid fire sequence, here is a series of tips on tax deductions and good financial stewardship.

▶ Miscellaneous tax deductions subject to the 2% adjusted gross income limit:

- Non-reimbursed work-related travel, hotel, food and transportation.
- Expenses related to searching for a new job in the same profession.

Educational expenses, as discussed previously. This can include expenses going to the AARC Summer Forum, Congress or educational classes.

Other unreimbursed employee business expenses (i.e., mileage). Note: Commuting expenses are not deductible.

Certain required work clothes and uniforms.

Dues paid to professional associations. This includes the AARC (less non-deductible AARC lobbying estimate of 20%).

Licensure fees.

Tools or equipment purchased as needed or required for your job.

Tax preparation fees.

Certain investment fees (e.g., safety deposit box).

▶ Mileage Rates (2015)

- 57.5 cents per mile for business miles driven.
- 23 cents per mile driven for medical or moving purposes.
- 14 cents per mile driven in service of charitable organizations

▶ Did you get a letter from the IRS?

Don't panic. Often they are just seeking additional information. If they say you owe more tax, read it thoroughly and consult a tax professional. Often it's an issue where further explanation may solve the problem. In any case, don't ignore it — it won't go away.

▶ Did you get a big refund in 2014 or maybe 2015, too?

Consider adjusting you payroll withholding. Why give Uncle Sam an interest-free loan?

▶ Are you close to retirement?

Consider increasing donations to a 401k or IRA.
Start looking at Social Security and Medicare rules – they are very complicated.

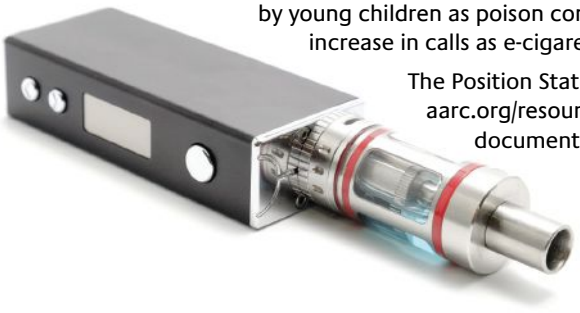
Go to: SSN.com for a variety of aids. No matter how old you are, it's good to verify your earnings record now rather than trying to fix it much later.

RC Currents

IN THE NEWS

AARC Updates Position Statement on Electronic Cigarettes

Given increasing reports of harm associated with use of electronic cigarettes, lack of medical evidence supporting their use as a stop-smoking aid, and the growing use of e-cigarettes among adolescents, the AARC has updated its Position Statement opposing the use of e-cigarettes. "The effects of nicotine on the body are known to be harmful and this does not change when ingested in a smokeless route," notes the statement. "Additional safety concerns are emerging concerning ingestion of the liquid nicotine solution (LNS) by young children as poison control centers report a continual increase in calls as e-cigarettes become more popular."



The Position Statement is available at: http://c.aarc.org/resources/position_statements/documents/ElectronicCigarette.pdf. ■

Check Out the AARC New Members List Online

The "New Members" column can be accessed at http://c.AARC.org/new_members. Current AARC members are encouraged to check this site on the first of each month to view the names of individuals who have been approved as "Active Members" of the Association. ■

Members Go All Out for National Respiratory Care Week

RESPIRATORY CARE CHANGING THE WORLD ONE BREATH AT A TIME

University of Missouri, Columbia, MO

RESPIRATORY CARE EDUCATION ANNUAL CALL FOR PAPERS

The AARC will publish Volume 25 of the Respiratory Care Education Annual (ISSN 2372-0735) in the fall of 2016. This refereed journal is committed to providing a forum for research and theory in respiratory care education and is listed in the Cumulative Index to Nursing and Allied Health Literature, and in Ulrich's Periodical Database.

The AARC Education Section invites educators to submit papers for consideration. Preference will be given to papers that emphasize original research, applied research, or evaluation of an educational method. Other topics that may be considered include interpretive reviews of literature, educational case studies, and point-of-view essays. Submissions will be reviewed based on originality, significance and contribution, soundness of scholarship (design, instrumentation, data analysis), generalizability to the education community, and overall quality of the paper.

Papers should be approximately 6–10 pages in length and must follow the guidelines as established by RESPIRATORY CARE. Abstracts should not exceed 250 words. General guidelines for the manuscript as well as guidelines for preparing the manuscript, text formatting, and reference formatting may be found at http://rc.rcjournal.com/site/includefiles/author_information.xhtml.

For more information, contact Dr. Dennis Wissing, editor, at (318) 573-9788 or Dr. Shawna Strickland at (972) 243-2272. Please send all manuscripts to the Editorial Board via the Respiratory Care Education Annual Submission Form (http://form.jotformpro.com/form/52365807894973). Deadline is **Feb. 15, 2016**. ■

New Columns in 2016

AARC Times is starting two new columns this year, and we need your stories to fill them up!

The first is called "Storytellers," and it's where AARC members can share stories about their favorite or most memorable patient. Maybe it was an "aha moment" when you knew you had made the right professional decision for that patient. Maybe it was when you first realized how much of a difference you were making in the lives of that patient and his family. Or maybe it was just something the patient said or did that made you laugh or cry or just be inspired to be a better RT.

The second, "Reflections," is geared especially toward AARC members who have recently retired from the profession. We'd like you to look back at your career or some aspect of it and tell us what it meant to you and why. Funny, sad, inspiring — the door is wide open!

So start brainstorming some ideas and then submit your stories to AARC Times Editor Marsha Cathcart at cathcart@aarc.org. ■

Medical Univeristy of South Carolina, Charleston, SC

Colorado Society, Englewood, CO

Here's Your Chance for a Free Membership Renewal

AARC Times is looking for creative AARC members to enter our annual AARC Photo Contest. Finalists will receive a free one-year membership renewal with the chance of their photo being chosen and featured on the cover of a 2016 *AARC Times* issue. For information on how to enter, go to www.AARC.org/resources/publications/aarc-times and click on the "Photo of the Year Contest" link. Deadline to submit photos is **March 1, 2016**. ■

Contribute to Our "Transitions" Column

The AARC "Transitions" column is devoted to sharing news about the passing of AARC members.

You can submit news about your colleagues' recent passing by going to http:c.AARC.org/transitions. Please provide any information about the member's recent obituary so that we can share it with the membership and pay tribute. ■

RT Student Members: Send Us Your Stories

AARC Times is always looking for good stories from AARC student members that relate special experiences and give the RT student perspective on the respiratory care profession they have chosen as a career.

If you have a story to tell, please contact *AARC Times* Editor Marsha Cathcart at cathcart@aarc.org and include in the subject line, "Student Member Story." Be sure to give us your full name, AARC member number, a brief description of the story subject, and why you would like to have it published. Then attach a Word document of the story. We hope to hear from you soon! ■

Submit Your Open Forum Abstract for AARC Congress 2016 by May 1

The AARC invites you to submit abstracts for the Open Forum at AARC Congress 2016. Considered by many to be the premier event at the AARC Congress, the Open Forum is your opportunity to gain recognition for your research in cardiorespiratory care by submitting an abstract for presentation at the Congress and having it published in Respiratory Care. We now have three different ways you can present your poster at AARC. See http://aarc2016.abstractcentral.com for more details. The deadline to submit abstracts for the Open Forum is **May 1, 2016**. ■


New England Institute of Technology, Warwick, RI


Mayo Clinic, Rochester, MN

Strange
But True...

A banana a day? Using a protein found in bananas called banana lectin, or BanLec, a group of international researchers has been able to engineer a substance capable of fighting off a range of viral infections in mice, including HIV, hepatitis C, and influenza.

From the taste buds to the sinuses: New research out of the Monell Center and the University of Pennsylvania suggests testing people for their sensitivity to the bitter taste could help predict outcomes from sinus surgery. Turns out, the receptor that detects bitter taste in the mouth is the same receptor that defends against bacterial infections in the upper airway.

Sleep problems linked to lead: Exposure to lead in early childhood may have long-lasting effects on a kid's sleep, report Penn Nursing researchers who looked at data on 665 kids in China. Those with higher lead levels at age three–five were twice as likely to report insomnia six years later and three times as likely to be using sleeping pills.

Monday, Monday: A new study out of the University of Pittsburgh finds people with a greater mismatch between their midsleep measurements on work versus free days were more likely to have poorer cholesterol profiles, higher fasting insulin levels, larger waist circumference, higher body-mass index, and insulin resistance. ■

Private Rooms
Worth the Cost

Private rooms have long been associated with fewer nosocomial infections in ICUs, but the higher building costs associated with private rooms have led many facilities to keep their sick-bay style, multi-patient rooms intact.

A new study from researchers at Cornell suggests that's not as cost-effective as it sounds. They analyzed the costs of constructing single rooms or converting multi-patient rooms to private rooms, including subsequent annual operational costs, versus the costs associated with maintaining the status quo. From there they looked at the "internal rate of return" to assess the financial feasibility of the investment in private rooms. Results showed building new private rooms or doing private-room conversions made economic sense, with an internal rate of return over a five-year analysis period of 56.18%, considerably higher than any liberal estimates of rate of return acceptable by health care organizations.

"Single-patient ICU rooms reduce the cross-transmission rate and avoid extra medical costs to contain infection, and our research showed that these savings offset capital costs," study author Hessam Sadatsafavi was quoted as saying. The study appeared in a recent issue of the *Journal of Critical Care*. ■

Advocate Good Samaritan Hospital, Downers Grove, IL

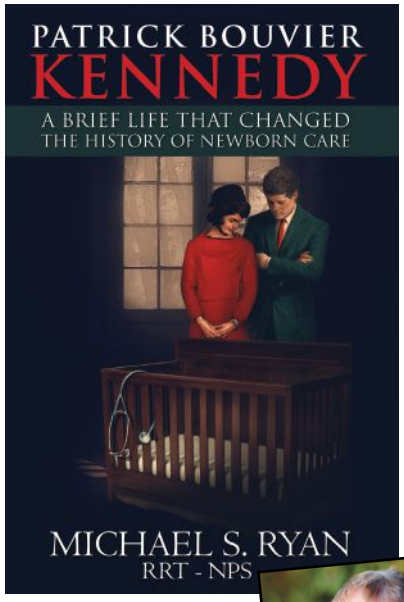
East Tennessee State University, Johnson City, TN

A Brief Life That Made a Big Difference

These days an infant born at 34 weeks gestation who suffers from respiratory distress syndrome will generally live to tell the tale. Indeed, state-of-the-art treatments and modalities available in the neonatal ICU have developed to the point where even 23- and 24-week preemies stand a good chance of survival.

Such was not the case when Patrick Bouvier Kennedy came into the world back in August of 1963. He, too, was 34 weeks gestation and suffered from what was then called "hyaline membrane disease." But despite being the son of President and Mrs. Kennedy, there was nothing doctors could do for him because medical science had yet to really address the issues surrounding preterm birth. He died when he was just 39 hours old.

Few people today remember the Kennedy's third child, in part because his death was quickly eclipsed by that of his father just three months later. But baby Patrick's death led to huge progress in the area of neonatal care; and AARC member Michael Ryan, RRT-NPS, has now become the one to tell the story in a new book titled, "Patrick Bouvier Kennedy, A Brief Life That Changed The History of Newborn Care."



Michael Ryan's new book chronicles the changes brought about in neonatal care after the death of the Kennedy's third child.

Physicians open up

"The subject of medical history is among my favorite reading topics," says Ryan, who works full time as a NICU therapist at California Hospital Medical Center in Los Angeles and per diem as an RT at Saint John's Medical Center in Santa Monica. Newborn medical history has held a special fascination, and he says it was through those readings that he became aware that "the Patrick Bouvier Kennedy story had never been fully told."

He started researching the case back in 2009 and decided to see if he could get in touch with Patrick's attending physician at Boston Children's Hospital. Given how many years it had been since the baby's death, he doubted he'd find James Drorbaugh, MD, still alive; but, to his surprise, the physician answered the phone on the second ring. "Dr. Drorbaugh — just a wonderful and supremely intelligent man — in turn put me in touch with his former colleagues, who in turn put me in touch with others in the know," says Ryan.

His initial obstacle to pursuing the book, which has been endorsed by Avery Fanaroff, MD, author and winner of the Virginia Apgar Award, and David W. Rose, archivist with the March of Dimes, was overcoming the inherent

Alegent Health at Home, Council Bluffs, IA

Cornerstone Medical Services, Akron, OH

desire in these physicians to keep the case private. "These retired MDs were among a generation that kept stories hidden away," says Ryan. But once they learned he was not a commercial author out to exploit the case, but rather a serious and knowledgeable RT who wanted to chronicle a modern RDS story, they began to open up to him. "Then I knew I was on the right track."

In addition to providing him with the inside story on Patrick's medical care, Ryan says the physicians shared their feelings of helplessness in dealing with the preterm infant in an era when medical science had so little to offer in the way of treatment. His book goes on to cover the medical advances that were spurred by Patrick's death and how they have changed the face of neonatal care in this country and around the world.

Intellectual grace

Michael Ryan says it was a joy to work with Patrick's physicians on the material for the book and emphasizes that, despite their age, they were intellectually sharp. "Although the doctors interviewed were well into their 80s and early 90s, each remarkably displayed little to no cognitive impairment often associated with advanced age," he says. "On the contrary, the intellectual grace with which they expounded their thoughts, ideas, and time-related events gave me little doubt to recognize I was sitting in front of some very remarkable individuals, academically born to that special time and pioneering spirit originating in the Boston/Harvard culture of newborn care." ■

Meeting of the Minds

Teens are on the same page as their parents when it comes to e-cigarettes, report C.S. Mott Children's Hospital researchers who polled both parents and teens age 13–18 about issues surrounding the devices. According to the results, more than 75% of both groups believe e-cigarette use should be restricted in public places and more than 80% think allowing teens to use e-cigarettes will increase their odds of using tobacco products.

Other highlights include:

- 92% of parents and 91% of teens think e-cigarettes should have health warnings like traditional cigarettes.
- 42% of teens say they know other teens who have used e-cigarettes.
- Over half of parents and teens think it is easy for people under 18 to buy e-cigarettes.
- 64% of parents and 71% of teens support banning candy- and fruit-flavored e-cigarettes.
- 14% of parents report having tried or are currently using e-cigarettes, compared to 9% of teens.

"The strong level of agreement between parents and teens suggests that both groups are concerned about the health hazards of e-cigarettes," Matthew M. Davis, MD, MAPP, director of the National Poll on Children's Health and professor of pediatrics and internal medicine at C.S. Mott was quoted as saying. ■

University of Mississippi Medical Center, Jackson, MS

Queens Medical Center, Honolulu, HI

RESPIRATORY CARE CHANGING THE WORLD ONE BREATH AT A TIME

Exhibit Hall Giveaway Helps Kansas Member Save a Life

Exhibitors who display their wares at the AARC Congress and Summer Forum love to have lots of giveaways on hand to help attendees remember their booths when they get home, and that was certainly the case at the recently concluded AARC Congress in Tampa, FL. Most therapists just stash these freebies away when they get home; but Terri Lesser, RRT, stowed one item she received at the Summer Forum in 2012 in her purse; and as she told Draeger representative Ed Coombs, MA, RRT, FAARC, when she went by the Draeger booth in Tampa, it ended up helping her save a life.

It was January of 2013 and she and her daughter were shopping at their local Sam's Club. Lesser's daughter saw a man collapse and immediately yelled for her mom to come over. Lesser went to the man and 911 was called. She saw he wasn't breathing and told her daughter to get her little Draeger giveaway mask on a keychain out of her purse and give it to her. "She dumped out my purse and found it, and I started CPR."

Another shopper — who turned out to be a charge nurse in the spine center at Stormont Vail Health Care in Topeka, KS, where Lesser works as a staff therapist — came over to help; and between the two of them they continued CPR until the paramedics arrived. "He was taken to the hospital where he was admitted to the ICU and placed on a vent," says Lesser. She later learned he had recently suffered a heart attack and had just been released from the hospital a few days earlier. "He had a defibrillator placed, and apparently it wasn't working very well."

Terri Lesser shows off her keychain mask outside the Sam's Club where she saved a man's life.

Thanks to her quick action — plus that little giveaway mask she got from the Draeger folks at the Summer Forum — the man is still with us today. Turns out he and his wife are regular volunteers at the hospital too, so Lesser gets to see him on a fairly regular basis. "Whenever they're at the hospital for something, they come find us; and we have a little hug fest," says the AARC member. ■

RESPIRATORY CARE CHANGING THE WORLD ONE BREATH AT A TIME

Manchester Community College, Manchester, CT

Great Falls College Montana State University, Great Falls, MT

Baylor University Center, Dallas, TX

Making Progress

The overall adult smoking rate in the latest survey on smoking from the Centers for Disease Control and Prevention was around 17%, down from 18% in 2013 and 21% in 2005. CDC Director Tom Frieden, MD, MPH, believes these figures show progress is being made in the war against smoking. However, room for improvement exists in some populations. Specifically, the smoking rates among people who were uninsured or on Medicaid were more than double that for people with private health insurance or Medicare, 28% and 29%, respectively, versus just 13%. Results of the survey were published in the *Morbidity and Mortality Weekly Report* in November. ■

TRANSITIONS

Leo Wittnebel, PhD, RRT, passed away unexpectedly in May of last year. Dr. Wittnebel was an associate professor in the department of respiratory and surgical technology at the University of Arkansas for Medical Sciences in Little Rock at the time of his death. He previously served as a professor of respiratory care at the University of Texas Health Sciences Center in San Antonio.

Azithromycin May Reduce LRTI Severity in Kids

U.S. researchers publishing in a recent issue of JAMA find children who are given azithromycin early during an apparent respiratory tract infection (RTI) are less likely to progress to a severe lower respiratory tract infection (LRTI) when compared to children given a placebo.

The study was conducted among 607 children age 12–71 months with histories of recurrent, severe LRTIs who were randomized to receive the antibiotic azithromycin for five days or matching placebo started early during each predefined RTI based on individualized action plans.

The study addressed concerns about the acquisition of azithromycin-resistant organisms in 86 participants at a single study site. Results showed numerically higher rates in oropharyngeal samples in participants receiving azithromycin, but evidence of acquisition of these organisms was also seen in participants not treated with azithromycin. Given these findings, the authors call for additional studies to assess the potential increased risk of antibiotic resistance versus the comparative effectiveness of azithromycin with respect to other asthma medications to prevent severe LRTI.

In the meantime, they believe children with the phenotype of wheezing may benefit from a therapeutic trial of azithromycin early in the course of RTIs based on a parent-initiated individualized plan; and those who demonstrate an azithromycin response, as reflected by less-severe episodes of RTI, may benefit from repeating such therapy with subsequent illnesses. ■

Norwalk Community College,
Norwalk, CT

Tallahassee Memorial Healthcare
Tallahassee, FL

▶ STUDENT CORNER

Everyone's a Critic… But, It's OK

by Tim Gilmore, MHS, RRT-NPS-ACCS, AE-C

It is said that everyone, to some degree, is a product of his or her environment. As a respiratory therapy student, it is an oft-times seemingly overwhelming task to balance all that is involved with being a clinical student in a rigorous program that combines hours of classroom learning with laboratory activities and bedside clinical rotations. As this demanding learning process begins, it is vital that clinical students receive constant feedback from a competent observer, be it an on-site program faculty, clinical site preceptor, or other seasoned RT. It is imperative that students utilize any constructive criticism as a means to self-reflect in hopes of developing the greatest skillset and eventually provide the best possible patient care.

I still remember the first time I saw a lab demo of some of the more invasive RT procedures like nasotracheal suctioning ("snogging"), intubation, and ABG draw and thought, "there's no way I'll ever be able to do this the right way." Moreover, I can vividly recall some of the many times that a clinical instructor or staff RT would offer their insight, opinions, or even blatant criticism as my shaky, novice approach to procedures and patient care advertised to the world that I was nervous and not quite yet feeling competent in my student name badge. I quickly learned that most everyone is more than happy to share their opinion on how to do something differently or slightly better. Also, not everyone is tactful in delivering this criticism. However, when filtering out the harshness of some of the mentor's critiques, you come to realize that most everyone who takes the time to give their suggestion is genuinely seeking to invest something into your future as a patient care provider. In self-reflecting, it is best to appreciate the concern of the critic and seek to glean something from the opinion of everyone. ■

Tim Gilmore is assistant professor in the cardiopulmonary science program at Louisiana State University Health Sciences Center in Shreveport, LA. He also serves as consortium program director at Bossier Parish Community College in Bossier City, LA.

Children's National Health System, Washington, DC

Catawba Valley Community College, Hickory, NC

Laurel Technical Institute, Sharon, PA

Industry Update

Featuring information on products and equipment from manufacturers

ARC Medical, Inc. Celebrates 25 Years in Business

When ARC started, there were virtually no hospitals using HME devices for humidification from intubation to extubation. ARC has been at the forefront of changing from expensive and problematic heated humidification systems starting with cascade humidifiers in the 1990s to heated wire circuits today. In 25 years of using ThermoFlo™ as a humidifier, there has never been a reported incidence of tube occlusion (effective humidification) nor a pneumothorax (patient safety). ARC congratulates the members of the respiratory community who have supported the use of our device. — Hal Norris, President, ARC Medical Inc. www.arcmedical.com

▶ Press releases and photos on new products are welcome. Send to Marsha Cathcart, *AARC Times* editor, at cathcart@aarc.org.

Calendar of Events

AARC & State Society Programs

February 4–5

Davis, West Virginia

WVSRC Winter Health Care Conference

Contact: www.wvsrc.org, Cynthia.Keely@gmail.com

February 18–19

Sioux Falls, South Dakota

Gold Standard Pulmonary Conference, Enrich Your Knowledge!

Contact: sdsrc.vendors@gmail.com

Submissions for the next available issue are due January 18.

For information on submitting calendar events, contact: Beth Binkley, AARC Times 9425 N. MacArthur Blvd, Suite 100, Irving, TX 75063-4706 (972) 243-2272 Fax (972) 484-2720 E-mail binkley@aarc.org

Advertiser Index

To advertise, contact: Phil Ganz, 48 Abbey Woods Ln., Ste.100, Dallas, TX 75248, Voice (972) 991-4994, Fax (888) 206-9006, phil.ganz@aarc.org. Or contact Beth Binkley, Advertising Assistant, Daedalus Enterprises, Inc., 9425 N. MacArthur Blvd., Ste. 100, Irving, TX 75063-4706, (972) 243-2272, Fax (972) 484-2720, binkley@aarc.org.

Ventilation for Life (Continued from page 6)

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Crafting a Dream Job in the Era of DRGs and Consultants

by Rick Ford

Rewarding, challenging, energizing, and of course, "inspiring," are just a few of the words that describe my career as a respiratory therapist.

In 1975, I enrolled in the RT program at Long Beach City College in Long Beach, CA, and got started on the right path by joining the AARC. After completing my first year of the program I was offered an RT job at nearby Pacific Hospital. How could I pass up the opportunity to make $3.43 per hour loading up a cart full of Bird Mark 7's to give 60 IPPB treatments per shift!

I also went through the program with my high school sweetheart, Lynn. We graduated in June, got married in July, and later that year we both took the RRT oral exams in Las Vegas. For us, respiratory care was truly a family affair.

Eventually, I found my niche in the ICU, where I became proficient with the MA-1, Searle VVA, and the Bird 6/14; made IMV and intrinsic PEEP valves; and used a mass spectrometer system to monitor respired CO2 and metabolics. As with many in my generation, my expertise in the ICU earned me a management position, and I became the director of the 120 FTE RC department at St. Mary Medical Center, also in Long Beach.

Serving as the director of a large, progressive RC department was a dream job — until the implementation of DRGs and the arrival of hospital consultants. In 1986, I was informed I had to reduce my staff to 90 FTEs, requiring me to lay off 50 individuals. That experience, as painful as it was, totally changed my career. I did not want to find myself in a position of ever having to lay off another respiratory therapist, so I became focused on learning everything I could about budgets, benchmarking, demand-driven staffing systems, and protocols. My goal was to make it unquestionably clear to decision makers that respiratory therapists were of unique value and represented the most efficient use of hospital resources.

In 1989, we were looking for a great place to raise our two kids, Kim and Jason, and made the move to San Diego. I started work at the University of California San Diego (UCSD) Medical Center as their education coordinator and soon was promoted to clinical manager. Consultants again changed the direction of my career. In 1994, I was called into the CEO's office and informed the director of respiratory care was being laid off and my position was being re-engineered to include being both the manager and the director.

Despite how I got there, now I really did have the dream job, and over the years I had the dream team, too. The most satisfying aspect of my 27 years at UCSD was to see others on our team develop a passion for those programs that enable best practice. The list of my UCSD mentors and partners is long, but through them I found success.

I wanted to retire by age 60, and I just made it. While I plan to stay active and engaged in our profession, I have newfound time to enjoy the things Lynn and I worked for during our careers as respiratory therapists. My focus has shifted from budgets and staffing to spending time with our five grandkids and other family, adventures in our RV, getting back into music, and a ton of projects on our to-do list. I'm busier now than when I was working!

Thank you to all who worked with me over the years, to Lynn for supporting my long work days and

about the author...

Rick Ford, BS, RRT, FAARC

time away from home, and to all who shared with me how to do the right things right. The advice I have for others is to start each day with the intent to make a difference. I tried to do that every day at work, and even after my June 2015 retirement I have not lost sight of doing the same. ■

Hawaii: "An opportunity to speak at a Hawaii Society for Respiratory Care meeting turned into a wonderful vacation for newly retired Rick Ford and his wife Lynn."

Rubicon Springs: "Retirement has meant travel for Rick Ford. Here he and his wife Lynn enjoy a peaceful moment at Rubicon Springs near Lake Tahoe."

— 2016 —

Since 1947, the AARC has been leading the effort to advance the science and practices of the respiratory care profession while promoting the highest quality of care for our patients. Collaborating with the respiratory communities at-large, we have successfully advocated at the federal, state and local level for patients, their families, the community, the profession and the respiratory therapist.

The AARC'S CORPORATE PARTNERS

The collaborative efforts between the respiratory care profession and manufacturers in pursuing unique and innovative ways to improve both the quality and outcomes of our patients makes us natural partners in today's ever changing healthcare continuum.

As health care finances become more strained and patient care becomes increasingly more complex, the mutual challenges become greater for the profession and its industry partners. The inherent synergies of the corporate partner concept are to provide an effective and efficient way to address those needs utilizing our combined skills and resources.

AARC CORPORATE PARTNERS

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MASIMO

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